QUALITY DIMENSIONS
SE 403
Assignment - 1
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Abstract

David Garvin [Gar87] suggests that quality should be considered by taking a multidi.mensional viewpoint that begins with an assessment of conformance and termi.nates with a transcendental (aesthetic) view. Although Garvin's eight dimensions of quality were not developed specifically for software, they can be applied when software quality is considered. Garvin's quality dimensions provide us with a "soft" look at software quality. Many (but not all) of these dimensions can only be considered subjectively. For this reason, we also need a set of "hard" quality factors that can be categorized in two broad groups: (1) factors that can be directly measured (e.g., defects uncovered during testing) and (2) factors that can be measured only indirectly (e.g., usability or maintainability). In each case measurement must occur. we should compare the software to some datum and arrive at an indication of quality.

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1 Quality Dimensions

Consider two products, Product A and Product B. when a customer or consumer says the quality of product A is better than the quality of product B, or in other words, the quality of product A is higher than B, how does he or she calculate the difference? Well, it can be determined by some factors, known as quality dimensions.

1.1 Conformance

It means meeting specifications given by customers or stakeholders. In the context of software, conformance refers to whether the software was developed according to software standards and according to coding conventions relevant to the applications.

Let's say I am a customer and I want to order a pen from you. Accordingly, you built me a pen that met all the requirements that I gave you and followed industry standards. Therefore, I can say your delivered product conforms to my desired specification.

1.2 Performance

It explicitly exhibits the main characteristics or functions of the product, In other words, it outlines the product's functionality.

When we buy a mobile phone we expect that we can communicate with other people in other places. When we buy a car, we expect that we will be able to drive it so that we can move people from one place to another. That is the type of functionality. What kind of tasks do I want to perform with that product with the service so the product in order has quality? To have quality, the product has to perform certain functions as desired and anticipated by the customer.

1.3 Reliability

It is essentially the consistency of performance. In terms of software, it commits that the delivery of the features and capability without failures or errors.

Performing a certain task or performing a certain function is important but we expect that such performance is reliable in other words when I want to

drive in the morning the car must function, and when I want to drive my car during my lunchtime, it should function as well and if I want to drive my car on weekends then the car is expected to function as well. so the functionality or the performance is important but also, the product or service must give me some belief that I can rely on that product or service whenever I need that kind of functionality. So that's the reliability.

1.4   Durability

Durability implies the longevity of the product. For software this is like, Does the software have the potential to be maintained (changed) or corrected (debugged) without inadvertently causing unwanted consequences? Does it have the potential to become more error-prone or less reliable as time passes? However, at the end we check the life cycle of the product. Following our example we want our car have longer life cycle at least 10 to 15 years neither have 2 or 3 years.

1.5   Features

It means extra characteristics beyond it's performance.

For instance, let's say we bought a mobile phone. Therefore it is obvious that the performance of that mobile phone will be calling, camera, sending texts, charging capability, recording, etc. but when it comes to multitasking, background blurring when shooting images, night mode capture, etc. those are called features which are given extra by a particular company.

1.6   Serviceability

It states the convenience of receiving services like repair, maintenance, bug fixing, etc.

Consider, I bought a car and it conforms to the exact specification that I had in my mind it performs very well, it is reliable, it is durable and it has many features like a very nice interior. but there is another very important thing in other words it has a long life cycle and during the life cycle sometimes my car breaks down or sometimes I am hit by another car or I hit another car by myself. So, you will see that my car needs some maintenance and product need some repair, and some other services right throughout its lifetime. So, how convenient it is to receive such a service during the product life-cycle?

With that perception we can say that the larger the serviceability the higher the quality.

1.7   Aesthetics

It focuses on the design of the product. The feel, look, touch, appearance, etc. is encompassed in aesthetics. And it is very subjective. But an aesthetic product is liked by the majority of people.

An example will be like, why people like slim laptops over fat ones?

1.8   Perception

It is related to the brand or brand image or social status and so on.

There are many good luxury brands in the global market. Sometimes there are some unknown small companies that make the similar products as luxurious brands and when we just look at conformance, performance, reliability, durability the products produced by that small local company are as good as that produced by this big-name big brand luxury company but even if the two products, have similar conformance, performance, reliability, and durability but still people are willing to buy this luxury brand by paying twice or three times much. All because those brand image companies or vendor created good products in their previous times which created a trust among customers.

The End